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SUGARCANE VARIETY TESTS IN FLORIDA, 1975-76 HARVEST SEASON

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SUGARCANE VARIETY TESTS IN FLORIDA, 1975-76 HARVEST SEASON

By Edwin R. Ricel/

ABSTRACT

Thirty-one varieties were grown at eight locations representing four soil types (Terra Ceia muck, Pahokee muck, Torry muck, and a sandy soil). Cane and sugar yields were measured against CP 63-588, the leading commercial variety in Florida, and, in second-stubble plantings, Cl 41-223. Three varieties, CP 71-1086, CP 71-1194, and CP 71-1442 were outstanding in yields of sugar per acre in the plant-cane experiments. CP 70-1133 averaged more sugar per acre at all locations than any other variety in the first-stubble tests. CP 69-1062 surpassed all other varieties in average yields of cane and sugar per acre in the second-stubble experiments. KEYWORDS: cane-sirup yields, sugarcane varieties, sugarcane yields.

INTRODUCTION

The sugarcane harvest season in Florida usually extends from late October to mid-April. Varieties are needed that mature throughout this long period in various types of soil and growing conditions. A large proportion of the sugarcane is grown in areas normally subjected to freezing and damaging temperatures. Most sugarcane research is being directed toward producing varieties adapted to these areas.

The 1975-76 harvest season was the coldest since the 1970-71 season.2/ One test field was exposed to a 27°F temperature on January 23, and there were seven nights in which the temperature reached 32°F or below. Some damage occurred on both mature cane and young plant cane, but damage to mature cane was not extensive throughout the industry. This resulted in a record production of cane and sugar during the 1975-76 harvest season.

TEST PROCEDURES

Replicated test plantings of 31 varieties were harvested at 8 locations. Five test fields were on Terra Ceia muck on the properties of Gulf and Western Food Products Co. at Okeelanta; Hatton Bros., Inc., east of Canal Point; Wedgworth Farms, Inc., east of Belle Glade; A. F. Saunders, Inc., south of Clewiston; and S. D. Corp., near 20-mile bend in Palm Beach County. A test field on Pahokee muck, similar to Terra Ceia muck,

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2/Mincey, W. F. 1976 Lakeland ARC Mimeo WE-1976-. Federal State Agricultural Weather Service (in press).

was located on A. Duda and Sons farm, east of Belle Glade. One test field on sandy soil (unclassified) was at Lykes Bros., near Lakeport in Glades County. A test field on Torry muck was located on the Beardsley farm near Lake Harbor. This area, closer to Lake Okeechobee than the other seven locations, seldom suffers from frost and freeze damage because of the warming effect of the lake.

Varieties had been observed in preliminary testing stages for several years, and the most promising varieties for commercial production were planted. CP 63-588, the leading variety in Florida,3/ was used as a check in all experiments. Cl 41-223 was also used as a check in the second-stubble experiments. In each of 19 tests, plots of one sixty-second acre were arranged in a randomized block design with four replications. The margins around the test plantings were buffered to eliminate mechanical damage and border effects, but individual four-row plots were not buffered. Planting, fertilizing, cultivating, controlling of insects and rodents, burning, loading, and hauling were done according to established plantation practices for adjacent commercial fields.

To determine maturing quality, 10 stalks were taken at random from the unburned standing cane in 2 of the 4 replications of each variety at each location between October 21 and 31, 1975. The samples were milled, the crusher juice was analyzed for Brix and sucrose, and indicated yields of sugar per ton of cane were determined. To calculate sugar per acre from these preharvest data, we assumed that yield of cane per acre was equal to the actual yield obtained at harvest.

All replicated tests were harvested between November 10, 1975, and March 19, 1976. After each test plot had been burned, all cane was cut and piled by hand, then weighed with a tractor-mounted weighing device. Fifteen full-length stalks were taken at random from each replication and transported to Agricultural Research Service's Canal Point Laboratory for weighing, milling, and crusher juice analysis.

All values for sugar per ton of cane and sugar per acre in this report are indicated (theoretical) yields calculated in accordance with Arceneaux's simplification of the Winter-Carp-Geerligs formula;4/ an explanation of the formula may be found in a previous publication.5/ Variety correction factors (table 1) used in the formula were obtained from milling studies at Canal Point.6/

Although indicated sugar yields reported herein may not be obtained by all sugar factories, these yields are representative of average values that can be obtained in Florida, and more important, they are valid for comparing varieties with different milling qualities and sucrose reduction factors.

RESULTS AND DISCUSSION

Tables 2-6 give the results of plant-cane experiments on Terra Ceia muck; tables 7-11 give the results of first-stubble experiments on Terra Ceia and Pahokee muck; and tables 12-16 give the results of second-stubble experiments. The results from plant-cane and stubble experiments on Torry muck are given in tables 17-19. Tables 20 and

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3/Rice, E. R., and Kidder, G. 1975. The 1975 sugarcane variety census for Florida. Belle Glade AREC Res. Rep. EV-1975-17, 5 pp.

4/Arceneaux, G. 1935. A simplified method of making sugar yield calculations in accordance with the Winter-Carp-Geerligs formula. Int. Sugar J. 37: 264-265.

5/Rice, E. R., and Hebert, L. P. 1972. Sugarcane variety tests in Florida during the 1971-72 season. U.S. Dep. Agric., Agric. Res. Serv. (Rep.) ARS-S-2, 14 pp.

6/The author is grateful to J. D. Miller, research geneticist, Agricultural Research Service, for supplying the variety correction factors for this report.

21 give the results of plant-cane and first-stubble experiments on sandy soil at the Lykes Bros. farm.

Experiments on Terra Ceia and Pahokee Muck

CP 71-1194, a new high-tonnage variety, was outstanding in the plant-cane tests. This variety averaged more sugar per acre than any other variety in both preharvest and harvest tests (tables 4 and 6). It produced 2,845 pounds of sugar per acre more than CP 63-588 in the average of three plant-cane tests at harvest.

CP 71-1442, a vigorous, high-tonnage, low-sucrose variety, produced an average of 77.01 tons of cane per acre in the plant-cane tests, thus surpassing all other varieties in these tests (table 2). It was surpassed only by CP 71-1194 in yields of sugar per acre on both preharvest and harvest dates (tables 4 and 6).

CP 71-1086 also produced high yields of sugar per acre in the plant-cane tests (tables 4 and 6). This variety averaged 106 and 115 percent of CP 63-588 in yields of sugar per acre on both preharvest and harvest dates.

CP 70-1133, a very promising, high-tonnage variety, was the outstanding variety in the first-stubble tests. This variety averaged more sugar per acre than any other in both preharvest and harvest tests (tables 9 and 11). It produced 2,834 pounds of sugar per acre more than CP 63-588 in the average of five first-stubble tests. CP 70-1133 was also the outstanding variety in the plant-cane tests during the previous harvest.7/

CP 70-1547, a high-tonnage, low-sucrose variety, produced 62.7$\overline{3}$ tons of cane per acre in the average of five first-stubble tests, thus surpassing all other varieties in these tests (table 7).

CP 69-1062, a new high-tonnage variety, was the outstanding variety in the second-stubble tests. It averaged 47.63 tons of cane at harvest, and 9,949 and 10,455 pounds of sugar per acre in preharvest and harvest, respectively, thus surpassing all other varieties in these categories (tables 12, 14, and 16).

CP 63-588 was harvested in plant-cane, first-stubble, and second-stubble tests. It surpassed all varieties in indicated yields of sugar per ton of cane in the average of three plant-cane harvests (table 5). It was surpassed only by CP 70-1133 and CP 70-1547 in yields of sugar per acre in first-stubble preharvest and harvest tests (tables 9 and 11). Second-stubble CP 63-588 averaged 9,498 pounds of sugar per acre in the average of six preharvest tests and was surpassed only by CP 69-1062 in the second-stubble tests (table 14). CP 63-588 yielded 248.6 pounds of sugar per ton of cane on the March 17 harvest at the A. F. Saunders farm (table 15), after having been exposed to a 27°F temperature and several nights with temperatures below 32°F.

Experiments on Torry Muck

Plant-cane, first-stubble, and second-stubble plantings were harvested on Torry muck at the Beardsley farm. CP 71-1194, characterized by high-tonnage and low-sucrose, produced 90.72 tons of cane per acre in the plant-cane harvest and was not surpassed by any variety in this category (table 17). The variety produced 20,376 pounds of sugar per acre at harvest and was not significantly exceeded by any other variety in this test.

CP 71-1442 yielded 88.01 tons of cane and 20,779 pounds of sugar per acre in the

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7/Rice, E. R. 1975. Sugarcane variety tests in Florida, 1974-75 harvest season. U.S. Dep. Agric., Agric. Res. Serv. (Rep.) ARS-S-73, 25 pp.

January 8 plant-cane harvest, thus exceeding all other varieties in yield of sugar per acre.

CP 71-1086 produced 19,112 pounds of sugar per acre in preharvest on October 30 and was not surpassed by any other variety in this category. CP 71-1086 was exceeded only by CP 71-1442 in pounds of sugar per acre at harvest on January 8.

CP 70-1547 was the outstanding variety in the first-stubble experiment. The variety surpassed all others in yields of cane and sugar per acre on the preharvest and harvest dates (table 18). Although CP 70-1547 was a high-yielding variety, it was low in sucrose content.

CP 63-588 produced 237.2 pounds of sugar per ton of cane in the October 30 first-stubble harvest, thus exceeding all other varieties in this category.

CP 69-1074 was the outstanding variety in the second-stubble experiment. This variety ranked first in yields of cane and sugar per acre on both preharvest and harvest dates (table 19). CP 69-1074 exceeded CP 63-588 by 32.4 pounds of sugar per ton of cane on January 12, a highly significant difference.

Experiments on Sandy Soil

CP 63-588 performed well in all yield categories at Lykes Bros. farm. In the January 16 plant-cane harvest, the variety exceeded all others in yield of sugar per ton of cane and was not significantly exceeded in pounds of sugar per acre by any other variety (table 20). In the first-stubble test, CP 63-588 yielded 259.1 pounds of sugar per ton of cane on October 22, thus surpassing all other varieties in this category (table 21). This variety also produced 10,438 pounds of sugar per acre and was only exceeded by CP 70-1133.

CP 71-1194 was superior to all other varieties in yields of cane and sugar per acre in the January 16 plant-cane harvest (table 20).

CP 71-1086, a promising new variety, exceeded all other varieties in yield of sugar per acre in the October 23 plant-cane preharvest, and was exceeded only by CP 71-1194 in yield of sugar per acre in the January 16 harvest.

CP 70-1133, one of the most promising varieties in the entire testing program, was the outstanding variety in the first-stubble experiment. The variety ranked first in yields of cane and sugar per acre on both preharvest and harvest dates (table 21). CP 70-1133 exceeded CP 63-588 by 2,170 pounds of sugar per acre, a highly significant difference.

SUMMARY

The plant-cane series contains four varieties of interest, namely, CP 70-1527, CP 71-1086, CP 71-1194, and CP 71-1442. The last three are high-tonnage types, with sugar per ton of cane slightly lower than CP 63-588. CP 70-1527 was about equal to CP 63-588 in tonnage and sucrose content but appears to grow more erect than CP 63-588.

CP 70-1133 was the outstanding variety in the first-stubble experiments. This variety averaged more sugar per acre at all locations than any other. CP 70-1133 was also outstanding in the previous harvest. All available seed cane of CP 70-1133 will be extended in the fall of 1976 for possible release to the industry.

CP 69-1062 was the outstanding variety in the second-stubble series on Terra Ceia and Pahokee muck. It surpassed all others in average yields of cane and sugar per acre.

Table 1.--Variety correction factors (V.C.F.)1/

Variety	V.C.F.	Variety	V.C.F.
Cl 41-223.....	1.00	CP 70-1512....	1.00
CP 63-588.....	1.00	CP 70-1527....	.98
CP 69-1052....	.96	CP 70-1547....	.96
CP 69-1056....	1.02	CP 70-1548....	1.00
CP 69-1059....	.98	CP 71-1027....	.96
CP 69-1061....	1.00	CP 71-1086....	.98
CP 69-1062....	.96	CP 71-1166....	.98
CP 69-1074....	1.02	CP 71-1194....	1.00
CP 69-1127....	.98	CP 71-1240....	.96
CP 69-2009....	.94	CP 71-1270....	.98
CP 70-1093....	.94	CP 71-1273....	.96
CP 70-1133....	1.00	CP 71-1442....	.98
CP 70-1163....	.96	CP 71-1449....	1.00
CP 70-1191....	1.00	CP 71-1504....	1.00
CP 70-1383....	1.00	CP 71-1555....	.98
CP 70-1467....	.92		

1/Variety correction factors were used to calculate the theoretical yield of 96° sugar per ton of cane according to Arceneaux's simplification of the Winter-Carp-Geerligs formula.

Table 2.--Yields of cane, in tons per acre, from plant-cane experiments on Terra Ceia muck

Variety	Average yield by farm and harvest date			Average yield, all farms
	Wedgworth 1/5/76	S. D. Corp. 3/5/76	Hatton Bros. 3/17/76	
CP 63-588	63.28	59.26	55.13	59.22
CP 70-1527	62.09	64.15	56.58	60.94
CP 71-1027	54.78	61.43	58.14	58.12
CP 71-1086	70.46	79.96	59.04	69.82
CP 71-1166	62.29	69.06	60.30	63.88
CP 71-1194	71.59	83.74	75.10	76.81
CP 71-1240	68.76	71.46	54.78	65.00
CP 71-1270	65.50	59.26	47.42	57.39
CP 71-1273	55.70	57.52	48.81	54.01
CP 71-1442	72.30	86.26	72.47	77.01
CP 71-1449	1/45.38	61.25	53.35	53.33
CP 71-1504	1/47.10	56.04	44.46	49.20
CP 71-1555	60.18	59.85	48.88	56.30
L.S.D.: 2/				
5% level	6.43	7.87	6.11	3.86
1% level	8.62	10.55	8.19	5.11

1/Severe rat damage.
2/L.S.D. = Least significant difference between any 2 values.

Table 3.--Indicated yields of 96° sugar, in pounds per ton of cane, from preharvest samples of plant-cane experiments on Terra Ceia muck

Variety	Average yield by farm and sampling date			Average yield, all farms
	S.D. Corp. 10/21/75	Hatton Bros. 10/28/75	Wedgworth 10/28/75	
CP 63-588	202.4	162.2	201.9	188.8
CP 70-1527.	180.0	168.5	203.3	183.9
CP 71-1027.	192.8	175.3	181.9	183.3
CP 71-1086.	170.9	167.0	175.9	171.3
CP 71-1166.	183.2	173.9	198.0	185.0
CP 71-1194.	175.3	144.7	192.3	170.8
CP 71-1240.	179.2	155.3	174.0	169.5
CP 71-1270.	145.4	136.1	178.2	153.2
CP 71-1273.	195.1	178.4	193.7	189.1
CP 71-1442.	158.4	152.8	186.0	165.7
CP 71-1449.	213.3	197.3	227.1	212.6
CP 71-1504.	185.4	170.0	220.0	191.8
CP 71-1555.	196.1	170.5	200.1	188.9

Table 4.--Indicated yields of 96° sugar, in pounds per acre of cane, from preharvest samples of plant-cane experiments on Terra Ceia muck 1/

Variety	Average yields by farm and sampling date			Average yield, all farms
	S.D. Corp. 10/21/75	Hatton Bros. 10/28/75	Wedgworth 10/28/75	
CP 63-588	11,994	8,942	12,776	11,237
CP 70-1527.	11,547	9,534	12,623	11,235
CP 71-1027.	11,844	10,192	9,964	10,667
CP 71-1086.	13,665	9,860	12,394	11,973
CP 71-1166.	12,652	10,486	12,333	11,824
CP 71-1194.	14,680	10,867	13,767	13,105
CP 71-1240.	12,806	8,507	11,964	11,092
CP 71-1270.	8,616	6,454	11,672	8,914
CP 71-1273.	11,222	8,708	10,789	10,240
CP 71-1442.	13,664	11,073	13,448	12,728
CP 71-1449.	13,065	10,526	10,306	11,299
CP 71-1504.	10,390	7,558	10,362	9,437
CP 71-1555.	11,737	8,334	12,042	10,704

1/ Yields of sugar per acre are based on early sucrose analysis and assume that early yields of cane per acre are equal to actual yields at harvest.

Table 5.--Indicated yields of 96° sugar, in pounds per ton of cane, from plant-cane experiments on Terra Ceia muck

Variety	Average yields by farm and sampling date			Average yield, all farms
	Wedgworth 1/5/76	S.D. Corp. 3/5/76	Hatton Bros. 3/17/76	
CP 63-588	199.3	179.1	242.9	207.1
CP 70-1527	205.4	186.3	221.5	204.4
CP 71-1027	195.3	181.8	227.0	201.4
CP 71-1086	199.4	188.0	222.4	203.3
CP 71-1166	189.5	165.2	201.5	185.4
CP 71-1194	200.0	172.4	218.3	196.9
CP 71-1240	186.6	171.2	210.4	189.4
CP 71-1270	179.0	157.0	210.9	182.3
CP 71-1273	211.4	172.3	229.5	204.4
CP 71-1442	187.1	178.1	223.4	196.2
CP 71-1449	219.8	180.0	219.9	206.6
CP 71-1504	211.6	180.3	225.5	205.8
CP 71-1555	196.4	176.4	240.0	204.3
L.S.D.: 1/				
5% level	22.0	16.5	20.9	11.2
1% level	(2/)	(2/)	(2/)	(2/)

1/ L.S.D. = Least significant difference between any 2 values.
2/ Not significant.

Table 6.--Indicated yields of 96° sugar, in pounds per acre, from plant-cane experiments on Terra Ceia muck

Variety	Average yield by farm and harvest date			Average yield, all farms
	Wedgworth 1/5/76	S.D. Corp. 3/5/76	Hatton Bros. 3/17/76	
CP 63-588	12,612	10,613	13,391	12,205
CP 70-1527	12,753	11,951	12,532	12,412
CP 71-1027	10,699	11,168	13,198	11,688
CP 71-1086	14,050	15,032	13,130	14,071
CP 71-1166	11,804	11,409	12,150	11,788
CP 71-1194	14,318	14,437	16,394	15,050
CP 71-1240	12,830	12,234	11,526	12,197
CP 71-1270	11,724	9,304	10,001	10,343
CP 71-1273	11,775	9,911	11,202	10,963
CP 71-1442	13,527	15,363	16,190	15,027
CP 71-1449	9,975	11,025	11,732	10,911
CP 71-1504	9,966	10,104	10,026	10,032
CP 71-1555	11,819	10,558	11,731	11,369
L.S.D.:1/				
5% level	1,314	1,236	1,266	729
1% level	1,761	1,656	1,697	965

1/ L.S.D. = Least significant difference between any 2 values.

Table 7.--Yields of cane, in tons per acre, from first-stubble experiments

Variety	Average yield by farm and harvest date					Average yield, all farms
	S.D. Corp[1] 11/21/75	Wedgworth[1] 1/2/76	Saunders[1] 3/17/76	Hatton Bros.[1] 3/18/76	Duda[2] 3/19/76	
CP 63-588	56.59	48.79	32.04	41.12	53.15	46.34
CP 69-2009	43.04	41.78	28.91	40.24	38.42	38.48
CP 70-1093	50.47	42.29	30.98	33.76	42.14	39.93
CP 70-1133	71.52	64.22	53.48	58.62	62.63	62.09
CP 70-1163	50.60	45.86	27.37	33.28	30.70	37.56
CP 70-1191	49.11	44.46	33.22	39.60	40.81	41.44
CP 70-1383	52.98	3/35.22	3/22.81	3/32.98	3/20.26	32.85
CP 70-1467	51.30	34.90	26.67	39.52	35.04	37.49
CP 70-1512	55.16	41.35	38.98	30.08	41.76	41.47
CP 70-1547	68.96	61.02	56.76	61.32	65.60	62.73
CP 70-1548	47.08	37.84	32.18	33.51	34.32	36.99
L.S.D.:[4]						
5% level	13.33	8.90	4.94	7.90	5.96	3.77
1% level	17.96	11.99	6.66	10.64	8.03	4.98

1/ Terra Ceia muck.

2/ Pahokee muck.

3/ Severe rat damage.

4/ L.S.D. = Least significant difference between any 2 values.

Table 8.--Indicated yields of 96° sugar, in pounds per ton of cane, from preharvest samples of first-stubble experiments

Variety	Average yield by farm and sampling date					Average yield, all farms
	S.D. Corp.[1/] 10/21/75	Dud[2/] 10/23/75	Hatton Bros.[1/] 10/28/75	Wedgworth[1/] 10/28/75	Saunders[1/] 10/31/75	
CP 63-588	229.5	199.6	185.9	208.9	243.1	213.4
CP 69-2009. . . .	241.4	228.3	210.1	222.6	224.1	225.3
CP 70-1093. . . .	241.0	216.2	223.0	231.3	247.4	231.8
CP 70-1133. . . .	238.9	192.8	174.2	215.2	227.7	209.8
CP 70-1163. . . .	231.8	230.7	198.4	208.6	216.9	217.3
CP 70-1191. . . .	215.4	213.3	208.0	191.0	176.6	200.9
CP 70-1383. . . .	233.6	211.1	155.9	198.8	234.3	206.7
CP 70-1467. . . .	238.5	241.2	190.6	233.5	230.3	226.8
CP 70-1512. . . .	207.5	203.4	174.7	203.0	196.8	197.1
CP 70-1547. . . .	209.0	168.8	164.8	193.4	172.4	181.7
CP 70-1548. . . .	242.2	239.8	166.3	235.4	237.4	224.2

1/ Terra Ceia muck.

2/ Pahokee muck.

Table 9.--Indicated yields of 96° sugar, in pounds per acre of cane, from preharvest samples of first-stubble cane experiments 1/

Variety	Average yield by farm and sampling date					Average yield, all farms
	S.D. Corp 2/ 10/21/75	Duda 3/ 10/23/75	Hatton Bros 2/ 10/28/75	Wedgworth 2/ 10/28/75	Saunders 2/ 10/31/75	
CP 63-588	12,987	10,609	7,644	10,192	7,789	9,844
CP 69-2009. . . .	10,390	8,771	8,454	9,300	6,479	8,679
CP 70-1093. . . .	12,163	9,111	7,528	9,782	7,664	9,250
CP 70-1133. . . .	17,086	12,075	10,212	13,820	12,177	13,074
CP 70-1163. . . .	11,729	7,082	6,603	9,566	5,937	8,183
CP 70-1191. . . .	10,578	8,705	8,237	8,492	5,867	8,376
CP 70-1383. . . .	12,376	4,277	5,142	7,002	5,344	6,828
CP 70-1467. . . .	12,235	8,452	7,533	8,149	6,142	8,502
CP 70-1512. . . .	11,446	8,494	5,255	8,394	7,671	8,252
CP 70-1547. . . .	14,413	11,073	10,106	11,801	9,785	11,436
CP 70-1548. . . .	11,403	8,230	5,573	8,908	7,640	8,351

1/ Yields of sugar per acre are based on early sucrose analysis and assume that early yields of cane per acre are equal to actual yields at harvest.

2/ Terra Ceia muck.

3/ Pahokee muck.

Table 10.--Indicated yields of 96° sugar, in pounds per ton of cane, from first-stubble cane experiments

Variety	Average yield by farm and harvest date					Average yield, all farms
	S.D. Corp.[1/] 11/21/75	Wedgworth[1/] 1/2/76	Saunders[1/] 3/17/76	Hatton Bros.[1/] 3/18/76	Duda[2/] 3/19/76	
CP 63-588	226.9	244.7	241.7	264.8	259.5	247.5
CP 69-2009. . . .	236.1	241.4	227.7	250.1	249.8	241.0
CP 70-1093. . . .	234.8	243.3	230.9	243.9	244.2	239.4
CP 70-1133. . . .	226.0	234.8	220.0	229.6	237.4	229.6
CP 70-1163. . . .	245.3	251.6	240.2	239.3	265.0	248.3
CP 70-1191. . . .	246.5	239.6	207.3	214.9	226.5	227.0
CP 70-1383. . . .	233.2	228.2	3/211.3	241.4	243.4	231.5
CP 70-1467. . . .	237.6	227.6	223.2	241.4	243.5	234.7
CP 70-1512. . . .	215.1	232.0	3/199.9	240.5	248.0	227.1
CP 70-1547. . . .	197.4	209.5	3/167.4	222.5	214.3	202.2
CP 70-1548. . . .	246.1	263.6	249.7	248.5	252.9	252.2
L.S.D.:[4/]						
5% level. . .	22.3	10.4	11.8	14.6	16.7	6.8
1% level. . .	30.0	13.9	15.9	19.7	22.5	9.0

1/ Terra Ceia muck.

2/ Pahokee muck.

3/ Sucrose reduced due to freeze damage.

4/ L.S.D. = Least significant difference between any 2 values.

Table 11.--Indicated yields of 96° sugar, in pounds per acre, from first-stubble cane experiments

Variety	Average yield by farm and harvest date					Average yield, all farms
	S.D. Corp 1/ 11/21/75	Wedgworth 1/ 1/2/76	Saunders 1/ 3/17/76	Hatton Bros 1/ 3/18/76	Duda 2/ 3/19/76	
CP 63-588	12,800	11,939	7,744	10,889	13,792	11,433
CP 69-2009	10,162	10,086	6,583	10,064	9,597	9,298
CP 70-1093	11,850	10,289	7,153	8,234	10,291	9,563
CP 70-1133	16,164	15,079	11,766	13,459	14,868	14,267
CP 70-1163	12,412	11,538	6,574	7,964	8,136	9,325
CP 70-1191	12,106	10,653	6,887	8,510	9,243	9,480
CP 70-1383	12,355	8,037	4,820	7,961	4,931	7,621
CP 70-1467	12,189	7,943	5,953	9,540	8,532	8,831
CP 70-1512	11,865	9,593	7,792	7,234	10,356	9,368
CP 70-1547	13,613	12,784	9,502	13,644	14,058	12,720
CP 70-1548	11,586	9,975	8,035	8,327	8,680	9,321
L.S.D. 3/						
5% level	1,931	996	670	1,058	1,013	511
1% level	2,601	1,341	902	1,424	1,364	675

1/ Terra Ceia muck.

2/ Pahokee muck.

3/ L.S.D. = Least significant difference between any 2 values.

Table 12.--Yields of cane, in tons per acre, from second-stubble experiments

Variety	Average yield by farm and harvest date						Average yield, all farms
	Duda[1/] 11/10/75	S.D. Corp.[2/] 11/21/75	Wedgworth[2/] 1/5/76	Okeelanta[2/] 3/4/76	Hatton Bros.[2/] 3/10/76	Saunders[2/] 3/17/76	
C1 41-223	44.42	44.70	33.07	29.85	32.91	27.69	35.44
CP 63-588	46.21	54.65	41.85	39.81	38.59	28.06	41.53
CP 68-1158. . . .	47.28	51.68	34.02	34.13	39.09	30.91	39.52
CP 69-1052. . . .	46.24	55.17	44.60	42.04	47.70	36.09	45.31
CP 69-1056. . . .	51.29	49.48	30.84	29.38	3/26.05	3/21.96	34.83
CP 69-1059. . . .	41.48	48.57	33.36	27.69	36.31	28.29	35.95
CP 69-1061. . . .	49.67	48.58	41.58	36.83	37.87	31.34	40.98
CP 69-1062. . . .	58.58	53.14	39.04	42.86	53.00	39.14	47.63
CP 69-1074. . . .	37.89	40.50	28.91	24.57	27.91	30.16	31.66
CP 69-1127. . . .	-----	-----	-----	32.62	33.49	-----	4/33.06
L.S.D.:5/							
5% level . .	6.32	(6/)	6.73	4.86	7.10	4.95	2.77
1% level . .	8.56	(6/)	9.12	6.57	9.59	6.71	3.65

1/ Pahokee muck.

2/ Terra Ceia muck.

3/ Severe rat damage.

4/ Average of 2 locations.

5/ L.S.D. = Least significant difference between any 2 values.

6/ Not significant.

Table 13.--Indicated yields of 96° sugar, in pounds per ton of cane, from preharvest samples of second-stubble cane experiments

Variety	Average yield by farm and sampling date						Average yield, all farms
	S.D. Corp.[1/] 10/21/75	Duda[2/] 10/23/75	Okeelanta[1/] 10/23/75	Hatton Bros.[1/] 10/28/75	Wedgworth[1/] 10/28/75	Saunders[1/] 10/31/75	
Cl 41-223. . . .	215.5	185.2	211.7	166.5	186.0	213.6	196.4
CP 63-588. . . .	222.9	234.2	228.5	196.8	254.0	237.4	229.0
CP 68-1158 . . .	206.9	168.3	200.5	167.6	185.6	200.6	188.2
CP 69-1052 . . .	224.7	218.7	196.9	190.6	206.7	194.4	205.3
CP 69-1056 . . .	249.8	225.2	230.6	215.1	236.8	243.1	233.4
CP 69-1059 . . .	231.2	224.0	228.6	199.1	205.0	237.3	220.9
CP 69-1061 . . .	211.9	222.3	213.2	196.7	236.5	230.7	218.6
CP 69-1062 . . .	219.1	202.5	195.9	197.4	211.8	216.2	207.2
CP 69-1074 . . .	249.7	230.4	233.7	211.9	275.3	245.5	241.1
CP 69-1127 . . .	-----	-----	228.8	230.6	-----	-----	3/229.7

1/ Terra Ceia muck.

2/ Pahokee muck.

3/ Average of 2 locations.

Table 14.--Indicated yields of 96° sugar, in pounds per acre of cane, from preharvest samples of second-stubble cane experiments 1/

Variety	Average yield by farm and sampling date						Average yield, all farms
	S.D. Corp.2/ 10/21/75	Duda3/ 10/23/75	Okeelanta2/ 10/23/75	Hatton Bros.2/ 10/28/75	Wedgworth2/ 10/28/75	Saunders2/ 10/31/75	
Cl 41-223	9,633	8,227	6,319	5,480	6,151	5,915	6,954
CP 63-588	12,181	10,822	9,097	7,595	10,630	6,661	9,498
CP 68-1158	10,693	7,957	6,843	6,551	6,314	6,201	7,426
CP 69-1052	12,397	10,113	8,278	9,092	9,219	7,016	9,352
CP 69-1056	12,360	11,550	6,775	5,603	7,303	5,338	8,155
CP 69-1059	11,229	9,292	6,330	7,229	6,839	6,713	7,939
CP 69-1061	10,294	11,042	7,852	7,449	9,834	7,230	8,950
CP 69-1062	11,643	11,862	8,396	10,462	8,269	8,462	9,849
CP 69-1074	10,113	8,730	5,742	5,914	7,959	7,404	7,644
CP 69-1127	------	------	7,463	7,723	------	-----	4/7,593

1/ Yields of sugar per acre are based on early sucrose analysis and assume that early yields of cane per acre are equal to actual yields at harvest.

2/ Terra Ceia muck.

3/ Pahokee muck.

4/ Average of 2 locations.

Table 15.--Indicated yields of 96° sugar, in pounds per ton of cane, from second-stubble cane experiments

Variety	Average yield by farm and harvest date						Average yield, all farms
	Duda[1/] 11/10/75	S.D. Corp.[2/] 11/21/75	Wedgworth[2/] 1/5/76	Okeelanta[2/] 3/4/76	Hatton Bros.[2/] 3/10/76	Saunders[2/] 3/17/76	
C1 41-223	184.2	227.0	248.9	234.0	238.3	240.8	228.9
CP 63-588	223.2	236.1	255.7	242.6	246.4	248.6	242.1
CP 68-1158. . . .	157.6	203.3	233.5	240.8	244.3	233.8	218.9
CP 69-1052. . . .	211.0	228.1	236.0	228.1	225.2	3/191.5	220.0
CP 69-1056. . . .	240.6	260.6	246.0	201.4	212.8	3/169.9	221.9
CP 69-1059. . . .	220.5	237.3	256.8	213.9	235.0	217.4	230.2
CP 69-1061. . . .	218.2	263.5	260.0	248.4	250.2	241.5	247.0
CP 69-1062. . . .	205.8	229.0	240.3	222.5	217.0	3/206.6	220.2
CP 69-1074. . . .	229.3	256.7	276.8	255.2	246.4	3/229.4	249.0
CP 69-1127. . . .	-----	-----	-----	252.6	266.4	-----	4/259.5
L.S.D.:5/							
5% level. . .	16.3	17.0	9.9	19.5	9.4	18.5	6.1
1% level. . .	22.1	23.0	13.4	26.3	12.7	25.0	8.1

1/ Pahokee muck.

2/ Terra Ceia muck.

3/ Sucrose reduced due to freeze damage.

4/ Average of 2 locations.

5/ L.S.D. = Least significant difference between any 2 values.

Table 16.--Indicated yields of 96° sugar, in pounds per acre, from second-stubble cane experiments

Variety	Average yield by farm and harvest date						Average yield, all farms
	Duda[1/] 11/10/75	S.D. Corp.[2/] 11/21/75	Wedgworth[2/] 1/5/76	Okeelanta[2/] 3/4/76	Hatton Bros.[2/] 3/10/76	Saunders[2/] 3/17/76	
Cl 41-223 . . .	8,182	10,147	8,231	6,985	7,842	6,668	8,009
CP 63-588 . . .	10,314	12,903	10,701	9,658	9,509	6,976	10,010
CP 68-1158. . .	7,451	10,507	7,944	8,218	9,550	7,227	8,483
CP 69-1052. . .	9,757	12,584	10,526	9,589	10,742	6,911	10,018
CP 69-1056. . .	12,340	12,894	7,587	5,917	5,543	3,731	8,002
CP 69-1059. . .	9,146	11,526	8,567	5,923	8,533	6,150	8,308
CP 69-1061. . .	10,838	12,801	10,811	9,149	9,475	7,569	10,107
CP 69-1062. . .	12,056	12,169	9,381	9,536	11,501	8,086	10,455
CP 69-1074. . .	8,688	10,396	8,002	6,270	6,877	6,919	7,859
CP 69-1127. . .	------	------	------	8,240	8,922	-----	3/8,581
L.S.D.:4/							
5% level. .	1,009	1,481	778	868	772	783	391
1% level. .	1,368	2,006	1,054	1,172	1,042	1,061	517

1/ Pahokee muck.

2/ Terra Ceia muck.

3/ Average of 2 locations.

4/ L.S.D. = Least significant difference between any 2 values.

Table 17.--Yields of cane and sugar from plant cane grown on Torry muck, Beardsley farm

Variety	Cane harvest 1/8/76 (tons/acre)	96° sugar at preharvest 10/30/75		96° sugar at harvest 1/8/76	
		Pounds/ ton of cane	Pounds/ acre of cane 1/	Pounds/ ton of cane	Pounds/ acre of cane
CP 63-588	74.21	237.6	17,632	229.5	17,031
CP 70-1527. . . .	72.36	240.9	17,432	226.9	16,418
CP 71-1027. . . .	77.68	216.0	16,779	235.8	18,317
CP 71-1086. . . .	85.82	222.7	19,112	239.4	20,545
CP 71-1166. . . .	71.78	217.5	15,612	234.4	16,825
CP 71-1194. . . .	90.72	201.7	18,298	224.6	20,376
CP 71-1240. . . .	71.39	202.9	14,485	230.7	16,470
CP 71-1270. . . .	74.94	185.7	13,916	233.0	17,461
CP 71-1273. . . .	62.90	230.6	14,505	255.8	16,090
CP 71-1442. . . .	88.01	204.4	17,989	236.1	20,779
CP 71-1449. . . .	58.90	219.1	12,905	260.7	15,355
CP 71-1504. . . .	62.06	228.1	14,156	239.3	14,850
CP 71-1555. . . .	63.36	232.7	14,721	227.6	14,398
L.S.D.: 2/					
5% level. . .	11.67	(3/)	(3/)	18.7	1,946
1% level. . .	15.64	(3/)	(3/)	25.0	2,609

1/ Yields of sugar per acre are based on early sucrose analysis and assume that early yields of cane per acre are equal to actual yields at harvest.

2/ L.S.D. = Least significant difference between any 2 values.

3/ Not determined.

Table 18.--Yields of cane and sugar from first-stubble cane grown on Torry muck, Beardsley farm

Variety	Cane harvest 1/9/76 (tons/acre)	96° sugar at preharvest 10/30/75		96° sugar at harvest 1/9/76	
		Pounds/ ton of cane	Pounds/ acre of cane 1/	Pounds/ ton of cane	Pounds/ acre of cane
CP 63-588	67.72	237.2	16,063	204.5	13,849
CP 69-2009. . . .	66.71	203.6	13,582	219.8	14,663
CP 70-1093. . . .	69.66	223.1	15,541	216.2	15,060
CP 70-1163. . . .	64.42	236.5	15,235	237.9	15,326
CP 70-1191. . . .	77.34	220.2	17,030	217.3	16,806
CP 70-1383. . . .	59.84	207.9	12,441	195.2	11,681
CP 70-1467. . . .	63.32	218.7	13,848	205.5	13,012
CP 70-1512. . . .	53.12	213.0	11,315	233.5	12,404
CP 70-1547. . . .	97.81	205.2	20,071	183.4	17,938
CP 70-1548. . . .	55.57	221.0	12,281	213.7	11,875
L.S.D.: 2/					
5% level. . .	9.03	(3/)	(3/)	21.9	1,687
1% level. . .	12.19	(3/)	(3/)	29.6	2,278

1/ Yields of sugar per acre are based on early sucrose analysis and assume that early yields of cane per acre are equal to actual yields at harvest.

2/ L.S.D. = Least significant difference between any 2 values.

3/ Not determined.

Table 19.--Yields of cane and sugar from second-stubble cane grown on Torry muck, Beardsley farm

Variety	Cane harvest 1/12/76 (tons/acre)	96° sugar at preharvest 10/30/75		96° sugar at harvest 1/12/76	
		Pounds/ ton of cane	Pounds/ acre of cane 1/	Pounds/ ton of cane	Pounds acre of cane
Cl 41-223	73.10	208.0	15,205	215.5	15,753
CP 63-588	71.46	213.8	15,278	231.3	16,529
CP 68-1158	65.50	190.1	12,452	223.3	14,626
CP 69-1052	78.75	218.9	17,238	255.4	20,113
CP 69-1056	58.61	255.9	14,998	248.0	14,535
CP 69-1059	67.21	212.1	14,255	255.8	17,192
CP 69-1061	63.68	241.4	15,372	257.8	16,417
CP 69-1062	64.88	217.6	14,118	229.7	14,903
CP 69-1074	80.98	240.7	19,492	263.7	21,354
L.S.D.: 2/					
5% level	7.00	(3/)	(3/)	22.2	1,618
1% level	9.48	(3/)	(3/)	30.1	2,192

1/ Yields of sugar per acre are based on early sucrose analysis and assume that early yields of cane per acre are equal to actual yields at harvest.

2/ L.S.D. = Least significant difference between any 2 values.

3/ Not determined.

Table 20.--Yields of cane and sugar from plant cane on sandy soil, Lykes Bros. farm

Variety	Cane harvest 1/16/76 (tons/acre)	96° sugar at preharvest 10/23/75		96° sugar at harvest 1/16/76	
		Pounds/ ton of cane	Pounds/ acre of cane 1/	Pounds/ ton of cane	Pounds/ acre of cane
CP 63-588	56.00	229.5	12,852	277.7	15,551
CP 70-1527	55.56	199.7	11,095	232.3	12,907
CP 71-1027	52.76	203.5	10,737	248.2	13,095
CP 71-1086	66.97	214.4	14,358	237.6	15,912
CP 71-1166	52.10	204.0	10,628	239.5	12,478
CP 71-1194	67.11	208.0	13,959	241.9	16,234
CP 71-1240	52.03	188.9	9,828	250.3	13,023
CP 71-1270	51.10	201.7	10,307	252.7	12,913
CP 71-1273	48.05	207.3	9,961	258.2	12,407
CP 71-1442	54.30	218.5	11,865	256.6	13,933
CP 71-1449	35.53	240.8	8,556	251.6	8,939
CP 71-1504	38.08	223.6	8,515	275.2	10,480
CP 71-1555	53.46	220.8	11,804	263.3	14,076
L.S.D.: 2/					
5% level	7.45	(3/)	(3/)	15.5	1,240
1% level	9.98	(3/)	(3/)	20.8	1,662

1/ Yields of sugar per acre are based on early sucrose analysis and assume that early yields of cane per acre are equal to actual yields at harvest.

2/ L.S.D. = Least significant difference between any 2 values.

3/ Not determined.

Table 21.--Yields of cane and sugar from first-stubble cane on sandy soil, Lykes Bros. farm

Variety	Cane harvest 1/14/76 (tons/acre)	96° sugar at preharvest 10/22/75		96° sugar at preharvest 1/14/76	
		Pounds/ ton of cane	Pounds/ acre of cane 1/	Pounds/ ton of cane	Pounds/ acre of cane
CP 63-588	37.36	259.1	9,680	279.4	10,438
CP 69-2009. . . .	22.93	238.2	5,462	267.1	6,125
CP 70-1093. . . .	25.72	228.5	5,877	262.3	6,746
CP 70-1133. . . .	47.40	242.2	11,480	266.0	12,608
CP 70-1163. . . .	30.72	202.9	6,233	244.8	7,520
CP 70-1191. . . .	35.54	222.1	7,893	268.8	9,553
CP 70-1383. . . .	33.08	212.0	7,013	267.7	8,856
CP 70-1467. . . .	28.30	225.7	6,387	259.6	7,347
CP 70-1512. . . .	34.26	176.6	6,050	249.9	8,562
CP 70-1547. . . .	43.92	207.5	9,113	230.9	10,141
CP 70-1548. . . .	29.21	233.0	6,806	279.7	8,170
L.S.D.: 2/					
5% level. . .	6.15	(3/)	(3/)	10.0	735
1% level. . .	8.28	(3/)	(3/)	13.5	990

1/ Yields of sugar per acre are based on early sucrose analysis and assume that early yields of cane per acre are equal to actual yields at harvest.

2/ L.S.D. = Least significant difference between any 2 values.

3/ Not determined.

* 1976-G.P.O.-1750-S/671-583/79

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